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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,765	06/28/2006	Mamoru Moriya	292234US0PCT	5795
22850	7590	04/22/2008	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			VO, HAI	
			ART UNIT	PAPER NUMBER
			1794	
			NOTIFICATION DATE	DELIVERY MODE
			04/22/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/584,765	Applicant(s) MORIYA ET AL.	
	Examiner Hai Vo	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15, 16 and 20-40 is/are rejected.
- 7) ☒ Claim(s) 17-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/28/2006</u> | 6) <input type="checkbox"/> Other: _____ |

1. The claim objection, the 112 claim rejections are considered moot in view of the cancellation of claims 1-14.
2. The art rejections over Burger et al (US 6,863,972) in view of Hills (US2003/0218266) and Maeda et al (US 2005/0154094) are maintained.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on November 28, 2006 was considered by the examiner on July 27, 2007. A copy of the signed IDS with initials is provided to Applicants as an attachment.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. Claims 15, 16, 22-26, 31, 32 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krejchi et al (US 6,139,945) in view of Hills (US 6,752,941). Krejchi discloses a laminate flooring product comprising a foam substrate and a decorative layer integrally bonded to the foam substrate by co-extrusion (column 4, lines 48-50). The foam substrate comprises a resin matrix comprising acrylonitrile-butadiene-styrene (ABS), polystyrene (PS) and high impact polystyrene (HIPS) wherein the ABS in an amount of 50 wt% or more (claim 8, column 3, lines 19-20, column 2, lines 65-67). This is within the claimed range. The foam core contains 1-2 wt% blowing agent (column 3, lines 60-61).

As the foaming ratio is controlled by an amount of the blowing agent, it is the examiner's position that the foam core would inherently have the foaming ratio within the claimed range. The same token is applied to the density of the foam core. The decorative layer is about less than 100 mils (column 4, lines 43-44). Krejchi teaches a decorative layer having a wood-grain finish (column 5, lines 1-2). Krejchi does not teach the decorative layer comprising 100 wt% of a primary component comprising one or both of AAS and AES and 5 -80 wt% of a secondary component comprising one or more of PS, HIPS and PP based on 100 wt% of the primary component of the decorative layer. Hill, however, teaches a product having a controllable and realistic wood-grain appearance comprising a surface layer which includes 100 wt% base polymer, 5-50 wt% poly-alpha-methylstyrene, 10-60 wt% acrylic resin, less than 75 wt% wood flour and 10-65 wt% wood color pigment (column 3, lines 10-35, 55-60; column 4, lines 5-7). Hill discloses the base polymer being ASA, AES or PS (column 4, lines 5-7). It appears that the surface layer of Hill meets all the structural limitations and chemistry as required by the claims. Thus, it is not seen that the density could be outside the claimed range as like material has like property. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute a surface layer of Hill for the decorative layer of Krejchi motivated by the desire to form a laminate flooring product having a controllable and realistic wood-grain appearance with improved durability and aesthetic qualities.

6. Claims 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krejchi et al (US 6,139,945) in view of Hills (US 6,752,941) as applied to claim 15 above, further in view of Burger et al (US 6,863,972). Krejchi does not teach the foam layer comprising a wood flour. Burger, however, teaches a flooring material comprising a synthetic wood layer secured to a foam layer by coextrusion (column 7, lines 14-16). The foam layer contains cellulosic fillers in an amount of 20 to 55 wt% by weight (column 6, lines 45-48). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add cellulosic fillers into the foam layer motivated by the desire to provide enhanced resistance to decay, deterioration and splintering.
7. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krejchi et al (US 6,139,945) in view of Hills (US 6,752,941) as applied to claim 15 above, further in view of Zehner (US 6,958,185). Krejchi does not teach the foam layer comprising a wood color pigment. Zehner, however, teaches a flooring material comprising a foam layer that includes a wood color pigment in an amount up to 6 wt%. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add a wood color pigment into the foam layer motivated by the desire to provide wood like appearance and UV resistance.
8. Claims 20, 21, 25, 26 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krejchi et al (US 6,139,945) in view of Hills (US 6,752,941) as applied to claim 15 above, further in view of JP 2003-184289. Krejchi does not

specifically disclose the expansion ratios of the synthetic wood layer and the foam layer. JP'289 discloses a floorboard comprising a surface layer and a foam layer wherein the surface layer has an expansion ratio of 1.0 to 1.1 times and a foam layer has an expansion ratio of 1.2 to 3 times (abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the expansion ratio as taught by JP'289 motivated by the desire to provide the component excellent in a woody touch and mechanical strength.

9. Claims 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krejchi et al (US 6,139,945) in view of Hills (US 6,752,941) as applied to claim 15 above, further in view of JP 2002-347152. Krejchi does not specifically teach the fiberglass wires embedded in the longitudinal direction of the foam layer of the component. JP'152, however, teaches a foam building material comprising the fiberglass wires embedded in the longitudinal direction of the material (abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to embed the fiberglass wires in the longitudinal direction of the foam core of the component motivated by the desire to impart mechanical strength and secondary processing properties to the products such as nailing, screw clamping.
10. Claims 33, and 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krejchi et al (US 6,139,945) in view of Hills (US 6,752,941) applied to claim 15 above, further in view of Pollard (US 3,810,337). Krejchi does not specifically

teach the aluminum wire embedded in the longitudinal direction of the body of the component. Pollard, however, teaches a foam structural material comprising the aluminum wires embedded in the longitudinal direction of the foam material (figure 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to embed the aluminum wires in the longitudinal direction of the foam core of the component motivated by the desire to adjust the stress and load bearing properties of the component.

11. Claims 15, 22, 23, 27-29, 31 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burger et al (US 6,863,972) in view of Hills (US2003/0218266) and Maeda et al (US 2005/0154094). Burger teaches a component comprising a synthetic wood layer secured to a foam layer by coextrusion (column 7, lines 14-16). Burger teaches a foam layer comprising polypropylene and 0.3 to 1 wt% blowing agent (column 4, line 66, and claim 1). Burger does not teach the foam layer further comprising 5 -50 wt% of ABS. Maeda, however, teaches a wood synthetic resin article comprising a foam layer containing 70 wt% PP and 30 wt% PS (table 1, example 4). Maeda also teaches the styrene resin that is used in combination with polyolefin can be PS, ABS or AS resin (paragraph 21). Likewise, Maeda broadly teaches the foam layer comprising 70 wt% PP and 30 wt% ABS. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use ABS in combination with PP of the Burger foam core motivated by the desire to

impart rigidity and secondary processing properties to the products such as nailing, sawing and screw clamping.

Burger does not specifically teaches a wood synthetic layer comprising 100 wt% of a primary component comprising one or both of AAS and AES and 5-80 wt% of a secondary component comprising one or more of PS, HIPS and PP based on 100 wt% of the primary component of the decorative layer. Hill, however, teaches a product having a controllable and realistic wood-grain appearance comprising a surface layer which includes 100 wt% base polymer, 5-50 wt% poly-alpha-methylstyrene, 10-60 wt% acrylic resin, less than 75 wt% wood flour and 10-65 wt% wood color pigment (column 3, lines 10-35, 55-60). Hill discloses the base polymer being ASA, AES or PS (column 4, lines 5-7). It appears that the surface layer of Hill meets all the structural limitations and chemistry as required by the claims. Thus, it is not seen that the density could be outside the claimed range as like material has like property. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute a surface layer of Hill for the wood synthetic layer of Burger motivated by the desire to form a laminate flooring product having a controllable and realistic wood-grain appearance with improved durability and aesthetic qualities.

12. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burger et al (US 6,863,972) in view of Hills (US2003/0218266) and Maeda et al (US 2005/0154094) as applied to claim 15 above, further in view of Zehner (US

6,958,185). Burge does not teach the foam layer comprising a wood color pigment. Zehner, however, teaches a flooring material comprising a foam layer that includes a wood color pigment in an amount up to 6 wt%. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add a wood color pigment into the foam layer motivated by the desire to provide wood like appearance and UV resistance.

13. Claims 20, 21, 25, 26 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burger et al (US 6,863,972) in view of Hills (US2003/0218266) and Maeda et al (US 2005/0154094) as applied to claim 15 above, further in view of JP 2003-184289. Burger does not specifically disclose the expansion ratios of the synthetic wood layer and the foam layer. JP'289 discloses a floorboard comprising a surface layer and a foam layer wherein the surface layer has an expansion ratio of 1.0 to 1.1 times and a foam layer has an expansion ratio of 1.2 to 3 times (abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the expansion ratio as taught by JP'289 motivated by the desire to provide the component excellent in a woody touch and mechanical strength.

14. Claims 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burger et al (US 6,863,972) in view of Hills (US2003/0218266) and Maeda et al (US 2005/0154094) as applied to claim 15 above, further in view of JP 2002-347152. Burger does not specifically teach the fiberglass wires embedded in the longitudinal direction of the foam layer of the component. JP'152, however,

teaches a foam building material comprising the fiberglass wires embedded in the longitudinal direction of the material (abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to embed the fiberglass wires in the longitudinal direction of the foam core of the component motivated by the desire to impart mechanical strength and secondary processing properties to the products such as nailing, screw clamping.

15. Claims 33, and 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burger et al (US 6,863,972) in view of Hills (US2003/0218266) and Maeda et al (US 2005/0154094) as applied to claim 15 above, further in view of Pollard (US 3,810,337). Burger does not specifically teach the aluminum wire embedded in the longitudinal direction of the body of the component. Pollard, however, teaches a foam structural material comprising the aluminum wires embedded in the longitudinal direction of the foam material (figure 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to embed the aluminum wires in the longitudinal direction of the foam core of the component motivated by the desire to adjust the stress and load bearing properties of the component.

Allowable Subject Matter

16. Claims 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art

taken alone or in combination teach or suggest a weather resistant synthetic wood as set forth in the claims.

Response to Arguments

17. Applicants contend that the combined teachings of Burger, Hill and Maeda do not suggest the claimed invention. The examiner respectfully disagrees. As previously discussed in paragraph no. 9 above, Burger teaches a component comprising a synthetic wood layer secured to a foam layer by coextrusion (column 7, lines 14-16). Burger teaches a foam layer comprising polypropylene and 0.3 to 1 wt% blowing agent (column 4, line 66, claim 1). Burger does not teach the foam layer further comprising 5 -50 wt% of ABS. Maeda, however, teaches a wood synthetic resin article comprising a foam layer containing 70 wt% PP and 30 wt% PS (table 1, example 4). Maeda also teaches the styrene resin that is used in combination with polyolefin can be PS, ABS or AS resin (paragraph 21). Likewise, Maeda broadly teaches the foam layer comprising 70 wt% PP and 30 wt% ABS. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use ABS in combination with PP of the Burger foam core motivated by the desire to impart rigidity and secondary processing properties to the products such as nailing, sawing and screw clamping.

Burger does not specifically teaches a wood synthetic layer comprising 100 wt% of a primary component comprising one or both of AAS and AES and 5 -80 wt% of a secondary component comprising one or more of PS, HIPS and PP

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based on 100 wt% of the primary component of the decorative layer. Hill, however, teaches a product having a controllable and realistic wood-grain appearance comprising a surface layer which includes 100 wt% base polymer, 5-50 wt% poly-alpha-methylstyrene, 10-60 wt% acrylic resin, less than 75 wt% wood flour and 10-65 wt% wood color pigment (column 3, lines 10-35, 55-60; column 4, lines 5-7). Hill discloses the base polymer being ASA, AES or PS (column 4, lines 5-7). It appears that the surface layer of Hill meets all the structural limitations and chemistry as required by the claims. Thus, it is not seen that the density could be outside the claimed range as like material has like property. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute a surface layer of Hill for the wood synthetic layer of Burger motivated by the desire to form a laminate flooring product having a controllable and realistic wood-grain appearance with improved durability and aesthetic qualities. Accordingly, the art rejections are sustained.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is

filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on Monday through Thursday, from 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hai Vo/
Hai Vo
Primary Examiner, Art Unit 1794